

# Clearwater Plateau Regional Project

## Pesticide Detections and Idaho's Pesticide Management Plan

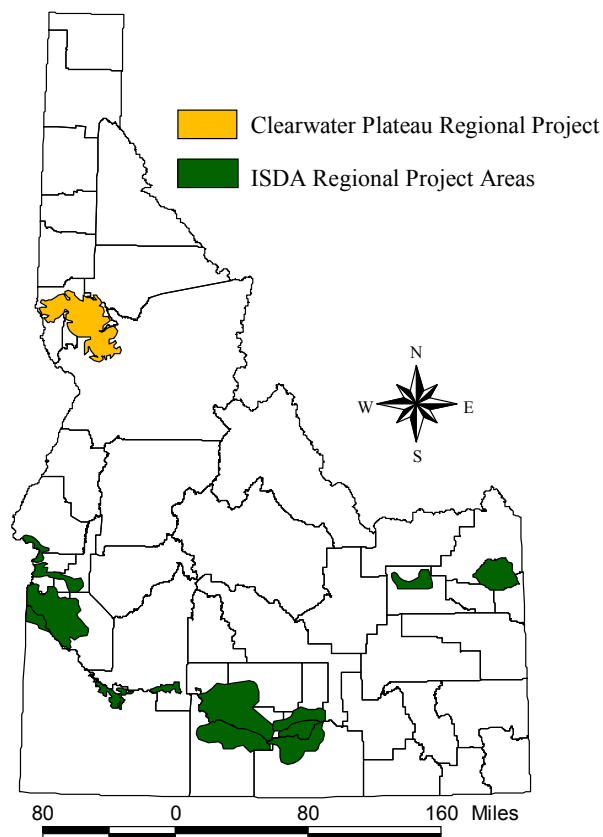
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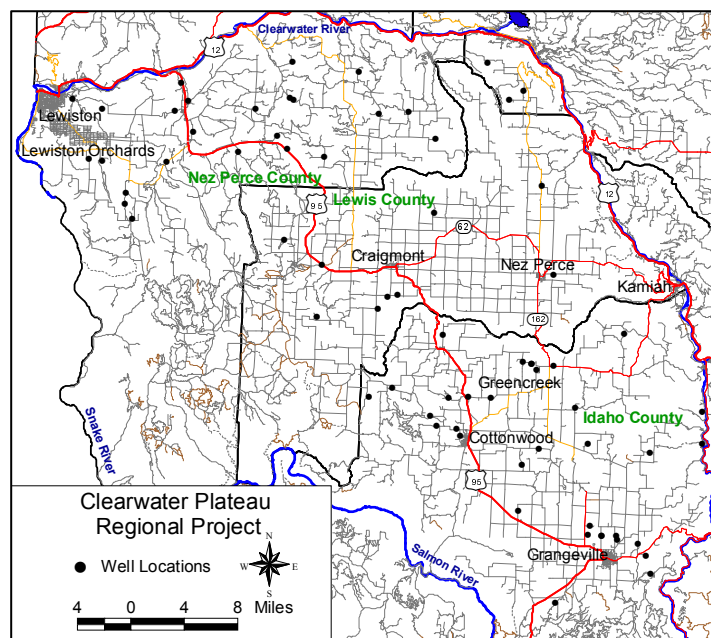
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This fact sheet summarizes pesticide detections in ground water found by the Idaho State Department of Agriculture (ISDA) in the Clearwater Plateau regional project, which covers portions of Clearwater, Lewis, Idaho and Nez Perce counties in northern Idaho (Figure 1). The Clearwater Plateau regional project began in 2001 as a result of completion of the Idaho Ground Water Quality Plan and Agriculture Ground Water Quality Protection Program for Idaho. In part, these documents mandate regional-scale monitoring of aquifers in the state that may be vulnerable to pesticide impacts.

The Clearwater Plateau regional project area encompasses approximately 950 square miles of agricultural lands in northern Idaho (Figures 1 and 2). The project is bound to the north and east by the Clearwater River and to the west and south by forested non-agricultural lands bordering the Salmon and Snake Rivers (Figure 2). Included within the project boundary is a large portion of the Nez Perce Indian Reservation. The reservation encompasses the central and northern portions of the study area (Carlson and Atlakson, 2007). Ground water underlying the area is primarily used for human consumption by municipalities and private farmsteads. The majority of wells evaluated within the regional ground water study draw ground water from interbeds of Columbia River basalts that underlie the area (Bentz, 1998). A few wells are located in localized alluvial aquifers, shallow springs, and granitic formations. Based on well drillers' reports from domestic wells in the project area, average static water levels



**Figure 1.** Location of Clearwater Plateau regional project and other active ISDA regional project areas.



**Figure 2.** Location of wells historically sampled as part of the Clearwater Plateau regional project.

range from 20 to 403 feet below land surface (Carlson and Atlakson, 2007).

The dominant agricultural practice within the area is dry land farming. Major crops in the area include wheat, barley, dry edible beans, lentils, oats, peas, and alfalfa hay (Idaho Agricultural Statistics Service, 2009).

ISDA statistically determined that sampling 72 randomly selected domestic wells every third or fourth year for pesticides would provide adequate data to evaluate overall ground water quality (Figure 2). Partial sampling of the project is conducted more frequently or as needed for follow up testing. All sampling was conducted following a quality assurance project plan (QAPP) and the established ISDA protocols for handling, storage and shipping. Pesticides analysis was conducted by the University of Idaho Analytical Sciences Laboratory (UIASL), in Moscow, Idaho. Duplicates, splits, and matrix spikes/matrix spike duplicates were collected and submitted as a part of the QAPP. Permission was gained from the well owners prior to sampling.



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### 2009 ISDA Pesticide Detections

Figure 3 shows the 2009 pesticide detections for the Clearwater Plateau regional project. A total of eight wells were sampled for pesticides in 2009; three wells had one or more pesticides detected within the ground water. The two most commonly detected pesticides with two detections each were diuron and desethyl atrazine, a breakdown product of atrazine. Both desethyl atrazine detections were elevated; one was at a Level 3 concentration and the other at a Level 2. The well (well 9501901) with a Level 3 desethyl atrazine detection also had a Level 2 atrazine detection and a Level 1 detection of deisopropyl atrazine, a breakdown product of atrazine. The cumulative concentration of atrazine and the atrazine breakdown products in well 9501901 was 4.03 µg/L, which is a Level 4 detection. The following pesticides were each detected once: atrazine, deisopropyl atrazine, picloram and triallate. The triallate detection was detected in a well north of Greencreek at a Level 4, which is above the Drinking Water Level of Concern for triallate of 0.45 µg/L, established by the Food Quality Protection Act. Five of the eight wells sampled in 2009 had no detections of pesticides.

This project was also sampled for pesticides in 2001, 2004 and 2007. The following pesticides were detected in 2007: atrazine, desethyl atrazine, deisopropyl atrazine, diuron, picloram and triallate. Two wells had elevated pesticide detections: one with a Level 4 triallate detection and one with a Level 2 detections of both atrazine and desethyl atrazine. The cumulative concentration of the elevated atrazine and desethyl atrazine (and a Level 1 deisopropyl atrazine) was 2.18 µg/L, which is a Level 3. These results are further summarized in the ISDA Technical Results Summary #37 written by Rick Carlson and Jessica Atkinson titled *Regional Ground Water Quality Monitoring Results for Idaho, Lewis and Nez Perce Counties, Idaho, 2001-2007*, which can be accessed at: <http://www.agri.idaho.gov/Categories/Environment/water/gwReports.php>

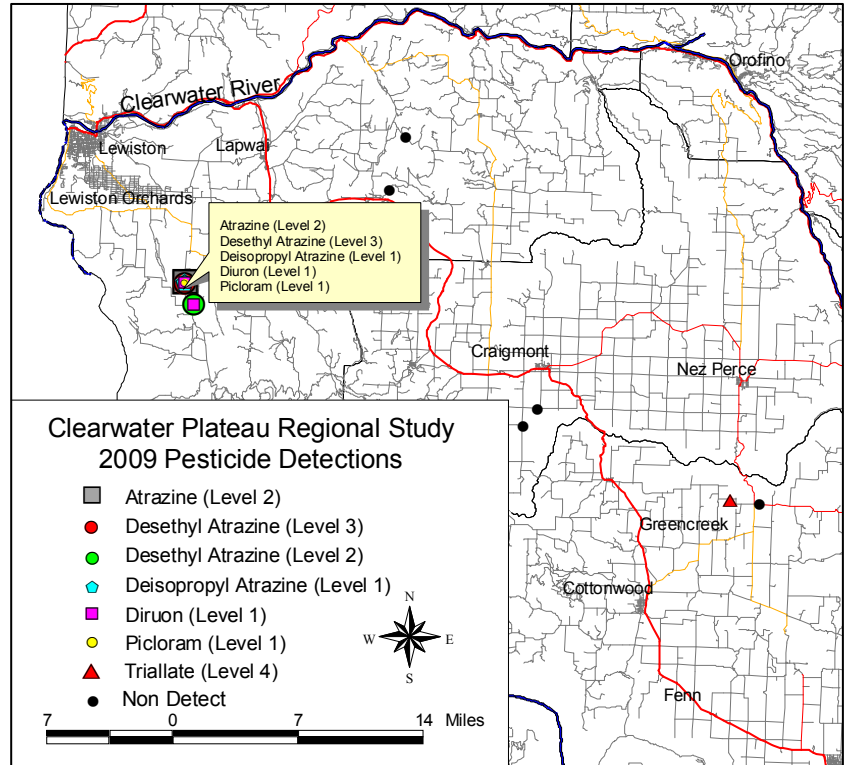


Figure 3. The 2009 monitoring results for the Clearwater Plateau regional project.

#### Idaho Pesticide Management Plan (PMP)

The Idaho State Department of Agriculture (ISDA) is the lead agency in developing the *Idaho Pesticide Management Plan (PMP) for Ground Water Protection*. ISDA has the authority to implement pesticide programs through a cooperative working agreement with the Environmental Protection Agency (EPA), Idaho state laws, and department rules. The Idaho PMP outlines processes to protect ground water from pesticides and defines pesticide detections based on the concentration of the detection compared to a reference point. The reference point refers to health based concentrations. Idaho has adopted the EPA's Maximum Contaminant Levels (MCLs) in the Idaho Ground Water Quality Rule (1997). Where no MCL exists, ISDA will use EPA Lifetime Health Advisories (HAL) first if they exist, and then an EPA Reference Dose (RfD) number.

#### The PMP categorizes detection levels into the following levels:

- Level 1:** Detection above the detection limit to less than 20% of Reference Point.
- Level 2:** Detection at 20% to less than 50% of Reference Point.
- Level 3:** Detection at 50% to less than 100% of Reference Point
- Level 4:** Detection equal to or greater than 100% of Reference Point.

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#### REFERENCES:

- Bentz, B., 1998. A Reconnaissance of Nitrite/Nitrate in Camas Prairie Ground Water Volume I, Lewis and Idaho County, Idaho. Idaho Department of Environmental Quality. Lewiston Regional Office. 42 pp.
- Carlson, R. and J. Atkinson, 2007. Regional Ground Water Quality Monitoring Results for Idaho, Lewis and Nez Perce Counties, Idaho, 2001-2007. ISDA Technical Results Summary #37.
- United States Department of Agriculture (USDA), National Agricultural Statistics Service, Idaho Field Office, 2009. 2009 Idaho Agricultural Statistics...including Idaho State Department of Agriculture's Annual Report, pp. 36-59.